

HEART IMAGING TECHNOLOGIES, LLC,	)	
	)	
	)	
	)	Case No. 1:12-cv-1020
Plaintiff,	)	
v.	)	<b>JURY TRIAL DEMANDED</b>
	)	
MERGE HEALTHCARE INCORPORATED,	)	
	)	
	)	
Defendant.	)	
	)	

Case 1:12-cv-01020-JAB-LPA Document 102 Filed 09/05/13 Page 1 of 25

## **TABLE OF CONTENTS**

A.	“Browser compatible format” terms (‘381 Patent, Claim 1; ‘698 Patent, Claim 1; ‘656 Patent, Claim 1).....	1
B.	“Without requiring software executing outside the Internet web browser” (‘381 Patent, Claim 1) .....	5
C.	“A pointer associated with the patient medical procedure” (‘381 Pat., Claim 1) .....	8
D.	“Before being transmitted” (‘381 Patent, Claim 1) .....	9
E.	“A user interface for a medical image workstation” (‘381 Pat., Claim 1) .....	11
F.	“Predetermining without user input” (‘656 Patent, Claims 1 and 2) .....	13
G.	“Image display setting” (‘656 Patent, Claims 1, 9, 10, and 12) .....	13
H.	“Original resolution” (‘656 Patent, Claim 1) .....	14
I.	“Providing medical information to the user” (‘381 Patent, Claim 1).....	16
J.	“To permit medical diagnosis” and “without loss of diagnostic data” (‘656 Patent, Claim 1) .....	16
K.	Means-Plus-Function Claims – the “engine” terms (‘698 Patent) .....	18
	CONCLUSION .....	20

## **TABLE OF AUTHORITIES**

	<b>Page(s)</b>
<b>CASES</b>	
<i>Absolute Software, Inc. v. Stealth Signal, Inc.</i> , 659 F.3d 1121 (Fed. Cir. 2011) .....	5
<i>Aristocrat Techs. Austl. PTY Ltd. v. Int’l Game Tech.</i> , 521 F.3d 1328 (Fed. Cir. 2008) .....	19
<i>Arlington Indus. v. Bridgeport Fittings, Inc.</i> , 632 F.3d 1246 (Fed. Cir. 2011) .....	12
<i>Astrazeneca AB v. Mutual Pharm. Co., Inc.</i> , 384 F.3d 1333 (Fed. Cir. 2004) .....	9
<i>Aventis Pharms. Inc. v. Amino Chems. Ltd.</i> , 715 F.3d 1363 (Fed. Cir. 2013).....	15
<i>Biogen Idec, Inc. v. GlaxoSmithKline LLC</i> , 713 F.3d 1090 (Fed. Cir. 2013) .....	15
<i>Chef Am., Inc. v. Lamb-Weston, Inc.</i> , 358 F.3d 1371 (Fed. Cir. 2004) .....	4
<i>Comark Commc’ns, Inc. v. Harris Corp.</i> , 156 F.3d 1182 (Fed. Cir. 2011) .....	18
<i>Edwards Lifesciences LLC v. Cook Inc.</i> , 582 F.3d 1322 (Fed. Cir. 2009) .....	9, 10, 11
<i>Ernie Ball, Inc. v. Earvana, LLC</i> , 502 F. Appx. 971 (Fed. Cir. 2013) .....	16
<i>Finisar Corp. v. DirecTV Group, Inc.</i> , 523 F.3d 1323 (Fed. Cir. 2008) .....	19
<i>Geneva Pharm. Inc. v. GlaxoSmithKline PLC</i> , 349 F.3d 1373 (Fed. Cir. 2003) .....	17, 18
<i>Honeywell Int’l v. ITT Indus., Inc.</i> , 452 F.3d 1312 (Fed. Cir. 2006) .....	6

<i>In re Rambus Inc.</i> , 694 F.3d 42 (Fed. Cir. 2012).....	5
<i>Liebel-Flarsheim Co. v. Medrad, Inc.</i> , 358 F.3d 898 (Fed. Cir. 2004).....	3
<i>Linear Tech. Corp. v. Impala Linear Corp.</i> , 379 F.3d 1311 (Fed. Cir. 2004) .....	19
<i>LSI Indus. v. ImagePoint, Inc.</i> , 279 F. Appx. 964 (Fed. Cir. 2008) .....	3, 5
<i>Plantronics, Inc. v. Aliph, Inc.</i> , 2013 WL 3927619 (Fed. Cir. July 31, 2013).....	15
<i>SciMed Life Sys., Inc. v. Adv. Cardiovascular Sys., Inc.</i> , 242 F.3d 1337 (Fed. Cir. 2001) .....	6
<i>Seachange Int’l, Inc. v. C-Cor Inc.</i> , 413 F.3d 1361 (Fed. Cir. 2005) .....	16
<i>Thorner v. Sony Computer Entm’t Am. LLC</i> , 669 F.3d 1362 (Fed. Cir. 2012) .....	3
<b>STATUTES</b>	
35 U.S.C. § 112, ¶ 6 .....	19, 20

Defendant Merge Healthcare, Inc. (“Merge”) submits this brief in response to Heart Imaging Technologies, LLC’s (“HIT”) Opening Markman Brief. (Doc. #85-1.) Because HIT significantly modified its proposed constructions for seven of the disputed claim terms in its Response Brief, (Doc. #93),<sup>1</sup> this brief also addresses HIT’s modified constructions and supporting arguments.

For some of the disputed terms, (*e.g.*, the “browser compatible format” terms), HIT has now proposed no less than four different constructions. (*See* Docs. #16, 32, 55, 61, and 93.) These modifications demonstrate HIT’s tortured attempt to extend the scope of the patents to read on products that the inventors never contemplated, and indeed, expressly disavowed, while attempting to maintain the validity of the patents in view of spot-on prior art. HIT adopts these inconsistent positions in an effort to breathe new life into its patents, which describe an invention borne of the bygone “dial-up” era of computing. In reality, HIT’s patents only cover one specific approach to medical image viewers that requires pre-conversion of images and the use of a “physiologic knowledge engine.” Due to advances in computing and internet technologies, HIT’s approach is now obsolete, and has been passed by in favor of other systems (including Merge’s) that take advantage of more powerful personal computers and faster internet connections.

**A. “Browser compatible format” terms (‘381 Patent, Claim 1; ‘698 Patent, Claim 1; ‘656 Patent, Claim 1)**

MERGE’S PROPOSED CONSTRUCTION	HIT’S PROPOSED CONSTRUCTIONS
“a type of file that is [not] capable of being viewed or displayed in a web browser”	<i>Opening Brief:</i> “a format that [can/cannot] be viewed using a standard, off-the-shelf web browser without any plug-ins, applets, or similar software”

---

<sup>1</sup> Attached as Appendix B is a chart showing differences in HIT’s proposed constructions.

	<i>Response Brief</i> : “a format that [can/cannot] be viewed using a standard web browser. If add-ons or plug-ins (like Java applets) are required, the format is not browser compatible. DICOM files are not browser compatible.”
--	---

HIT has now modified its proposed construction for the “browser compatible/incompatible” set of terms four times. (See Docs. #16, 32, 55, 61, and 93.) HIT’s current proposal suffers even more shortcomings than its earlier proposal, as HIT has abandoned the rigorous exercise of trying to give “browser compatible format” its proper meaning, instead choosing to define the term by cherry-picking concepts from the specification without justification.

HIT’s current construction is flawed in several respects. *First*, HIT’s proposal cannot be substituted into any of the claims without causing considerable confusion to the factfinder. As discussed in Merge’s Opening Brief and shown in the chart below, this problem is exacerbated for those terms where the “software executing outside the browser” limitation (underlined in the table below) is also present. (Doc. #88, pp. 3, 5-8.)

Original Limitation	Claim Limitation With HIT’s Construction Inserted
“... the plurality of navigational images comprising <i>a format that is compatible for displaying in an internet web browser</i> <u>without requiring software executing outside the Internet web browser</u> . . .”	“...the plurality of navigational images <i>comprising a format that can be viewed using a standard web browser. If add-ons or plug-ins (like Java applets) are required, the format is not browser compatible. DICOM files are not browser compatible. Without the need to add any plug-ins or add-ons (like a Java applet) to a standard web browser</i> . . .”

The result from inserting both constructions is nonsensical and should be rejected.

*Second*, HIT is attempting to import the “software executing outside the browser” limitation “in *all* of the patents in suit.” (Doc. #85-1, p. 6 (emphasis added).) This

approach must be rejected because the patents expressly incorporate this limitation into some terms (as shown above, for example), but not others, and this distinction must be maintained. *See LSI Indus. v. ImagePoint, Inc.*, 279 F. Appx. 964, 972 (Fed. Cir. 2008) (where limitation already expressly exists in claim, it is improper to impose that limitation elsewhere because it would render the existing limitation meaningless).

In advocating its new construction, HIT advances two arguments, neither of which has merit. HIT first argues that “DICOM cannot be browser compatible” because the specification lists DICOM as an example of a browser incompatible format. (Doc. #93, pp. 8-9.) However, the fact that DICOM is identified as one example of a “browser incompatible format” in the specification does not, without more, warrant importing this limitation into the construction of the disputed term itself. *See Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (“It is not enough for a patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments, the patentee must ‘clearly express an intent’ to redefine the term.”).

Moreover, it was the inventors’ decision to claim “a format that is incompatible with displaying in an Internet web browser” instead of specifically claiming “DICOM” format. *See Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 902 (Fed. Cir. 2004) (scope of claim is defined by breadth of claim language, not by examples given in specification, absent some compelling justification such as disclaimer). And while DICOM may have been a “browser incompatible format” in 2000 when the patents were drafted, that is no longer the case today. (See Doc. #89, Declaration of Dr. David Clunie (“Clunie Decl.”) ¶ 30.) If HIT had intended for these terms to be judged by 2000 standards, the inventors could have drafted the claim accordingly. Instead, the inventors chose different words with a different meaning, and the Court cannot now rewrite these

terms to specifically exclude (or include) DICOM in order to preserve the validity of the claims. *See Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004) (“This court . . . repeatedly and consistently has recognized that courts may not redraft claims, whether to make them operable or to sustain their validity.”)

HIT also argues in Section IV-I-A of its Response Brief that its newly-proposed construction should be adopted because the Wong reference cited in the ‘381 File History contains an example of “plug-in assisted DICOM viewers.” (Doc. #93, p. 8.) There is no basis for adopting HIT’s proposed construction because Wong expressly discusses the “use of applications executing *inside the browsers, such as Java applets.*” (Doc. #93, Ex. B, p. 86 (emphasis added).) In other words, a reference *within* the file history of the ‘381 patent states that Java applets execute *inside* the web browser, contradicting HIT’s position that Java applets are software executing outside the browser.

HIT next incorrectly argues in Section IV-I-B that images “must be viewable with only a standard web browser.” (Doc. #93, p. 8.) Specifically, HIT points to statements in several file histories that allegedly distinguish the patented invention from references that required additional software. (*Id.*, pp. 8-9.) Those statements, however, either relate to patents which already expressly incorporate the “software executing outside the browser” limitation (*e.g.*, the ‘381 Patent or ‘636 Patent) or contain vague and ambiguous discussions that are insufficient to act as a file history disclaimer (*e.g.*, Doc. #65, App. F., Application No. 11/238,409 – “Wong . . . teaches that using an application module, like Java, with an Internet web browser ‘makes PACS engineering and integration more difficult, and reduces overall system performance.’”). (*Id.*)

In another effort to advance its construction, HIT contends that claim differentiation “does not apply to claims in different patents.” (Doc. #93, p. 9.) That is



legally incorrect. *In re Rambus Inc.*, 694 F.3d 42, 48 (Fed. Cir. 2012) (applying claim differentiation between related patents). As such, in addition to the reasons given above, it is also improper to import the “software executing outside the browser” limitation into the claims where it is not already present because it would violate the claim differentiation doctrine. *Id.*; *see also LSI Indus.*, 279 F. Appx. at 972. Moreover, reading the “software executing outside the browser” limitation into the claims where it is already present would violate the principle that each word of a claim should be given a meaning. *Absolute Software, Inc. v. Stealth Signal, Inc.*, 659 F.3d 1121, 1141 (Fed. Cir. 2011) (rejecting claim construction that would render claim term meaningless).

By comparison, Merge’s proposed construction – “a type of file that is [not] capable of being viewed or displayed in a web browser” – embraces the plain and ordinary meaning of this term, including the examples from the file histories, and does not improperly import any limitations. As such, the Court should reject HIT’s proposed construction, and adopt Merge’s construction.

**B. “Without requiring software executing outside the Internet web browser” (‘381 Patent, Claim 1)**

MERGE’S PROPOSED CONSTRUCTION	HIT’S PROPOSED CONSTRUCTIONS
“[without] executing software or code that has to be downloaded or installed separate from the web browser”	<p><i>Opening Brief:</i> “Without the need to add any plug-ins, applets, or similar software to a standard, off-the-shelf web browser”</p> <p><i>Response Brief:</i> “Without the need to add any plug-ins or add-ons (like a Java applet) to a standard web browser”</p>

HIT proposes yet another new construction for this term. In doing so, HIT still fails to provide any rationale for construing that term to require “plug-ins or add-ons” as

opposed to Merge's construction requiring "software that has to be downloaded or installed separate from the web browser."<sup>2</sup> The patents identify drawbacks associated with the use of *any* software that has to be downloaded or installed, calling out Java as one example:

- Fig. 1 of the patents shows that a "user must wait" while code is "downloaded to allow [a] user to adjust brightness, movie speed, etc.";
- "the user must wait additional time while the 'Java' code is downloaded";
- "the user must train to become familiar with the controls defined by the [downloaded code]";
- "the user must wait while the [downloaded code] processes the image"; and
- the downloaded code can cause web browsers to "crash."

(‘381 Pat. at 3:18-39.) Thus, the patents disclaim any software that has to be downloaded, not just "plug-ins, applets or similar software" or "plug-ins or add-ons." *E.g., Honeywell Int’l v. ITT Indus., Inc.*, 452 F.3d 1312, 1319 (Fed. Cir. 2006) ("[B]ased on the disclosure in the written description, which demeaned the properties of carbon fibers, we conclude that the patentee thereby disavowed carbon fibers from the scope of the ‘879 patent’s claims."); *SciMed Life Sys., Inc. v. Adv. Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001) ("Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent.").

The only justification that HIT provides for arbitrarily limiting "software executing outside the web browser" to "plug-ins or add-ons," as opposed to all software that has to be downloaded or installed separate from the web browser (Merge's construction), is that Merge's construction would purportedly "prohibit the download of

---

<sup>2</sup> This is another modified construction which adds an entirely new term: "add-on."

any software or code to a browser, even software that is contained in the webpage of the user interface.” (Doc. #93, p. 13.) HIT’s critique is misplaced. In reality, Merge’s construction would only prohibit downloaded code that was susceptible to the disadvantages with Java identified above.

HIT’s Response also wrongly alleges that Merge’s construction would exclude HTML (Hyper-Text Markup Language) and HTML forms. Nevertheless, Merge’s construction would allow for HTML because it is not code and not susceptible to the disadvantages above – a point HIT does not contest. Indeed, HTML is not even “code,” but rather a “Markup Language,” which is more analogous to a Microsoft Word document than executable code. And, an “HTML Form” is a method of sending information back to the web server. Simply put, neither HTML nor HTML Forms are “code” and neither would be excluded under Merge’s construction.

Finally, HIT argues that this term should be construed consistent with the intrinsic evidence, but fails to account for the three references cited by the PTO examiner within the ‘381 File History (thus, intrinsic evidence) which indicate that Java executes *inside* the web browser. (Clunie Decl. ¶ 55.) As such, Merge’s proposed construction is the only one that properly resolves the contradictory teachings about what executes inside and outside the web browser. (See Doc. #88, pp. 6-8.) It is for that reason, among others, that HIT’s claim construction expert endorsed Merge’s construction. (Ex. 1, Deposition of Orlando Simonetti (“Simonetti Dep.”) 171:8-172:7.) For all these reasons, and those set forth in Merge’s Opening Markman Brief, the Court should adopt Merge’s proposed construction.

**C. “A pointer associated with the patient medical procedure” (‘381 Pat., Claim 1)**

<b>MERGE’S PROPOSED CONSTRUCTION</b>	<b>HIT’S PROPOSED CONSTRUCTIONS</b>
“a link to a webpage containing one or more images from the patient medical imaging procedure”	<p><i>Opening Brief:</i> “a link to another item, such as a web address, associated with an imaging study”</p> <p><i>Response Brief:</i> “A pointer associated with a medical imaging procedure.”</p>

Prior to HIT’s significant change in its claim construction position, the parties generally agreed that a pointer is a “link that contains the address of [an object],” but disagreed as to the object of that link. Indeed, HIT’s opening brief stated: “the term ‘pointer’ means ‘a link that contains the address of another item.’” Now, HIT proposes an entirely new construction, and argues that a “pointer” is no longer a “link” and does not have to “contain the address of another item.” Instead, HIT simply leaves unanswered the question of what is a pointer. HIT’s new construction departs not only from HIT’s prior construction, but also the testimony of HIT’s own expert, Dr. Simonetti. (See Doc. #55-3, p. 7; *see also* Simonetti Dep. 187:21-188:24.)

HIT argues that a link/pointer can be to an “index page that looks up the ‘associated’ medical imaging procedure” based on Fig. 13, which shows a page of links that, when clicked, take a user to a second page of links (not depicted). (Doc. #93, p. 10) But, only when a user clicks on the second page of links is the medical image displayed in Fig. 14. HIT claims, however, that the links on the first page, Fig. 13, are “pointers” to a patient medical procedure even though nowhere in the description of Fig. 13 do the patents even mention a “pointer.” (*Id.*) Moreover, HIT’s expert disagreed with HIT’s position, testifying that “by clicking on [the pointer], it would take you to those CT images,” not to an intermediate site as HIT now suggests. (Ex. 1, Simonetti Dep. at

186:8-14.) HIT’s argument also fails because the links provided by the “post engine” all contain the address of the web page containing the images from the patient medical imaging procedure. As set forth in Merge’s opening brief, however, Merge’s construction is consistent with the disclosures in the specification – an approach previously affirmed by HIT – which requires that the links allow the physician to *immediately* view images. For all these reasons, Merge’s construction should be adopted.

**D. “Before being transmitted” (‘381 Patent, Claim 1)**

<b>MERGE’S PROPOSED CONSTRUCTION</b>	<b>HIT’S PROPOSED CONSTRUCTION</b>
“prior to a user request to view the one or more image(s)”	“at a time prior to transfer”

As set out in Section F of Merge’s Opening Markman Brief and the Court’s August 14, 2013 Memorandum and Order (Doc. #95, pp. 21-24), the patents rejected the use of “on-the-fly” processing (the conversion of an image in response to a request to view the image) as an unacceptable option for viewing medical images over the Internet when the patents were drafted in 2000. (*See, e.g.*, ‘381 Pat. at 3:1-7; 3:44-46.) The patents spurned “on-the-fly” processing because of “[s]everal technical limitations of current Internet standards [in 2000]” that “create[d] a situation where straightforward processing of the image data results in images which transfer across the Internet too slowly, lose diagnostic information or both.” The Federal Circuit has held that such statements constitute a disavowal of claim scope. *See Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1333 (Fed. Cir. 2009). Indeed, the Federal Circuit has noted that the concept of disavowal does not require an “expression of manifest exclusion or restriction,” such as the phrase “my invention does not include \_\_\_\_.” *Astrazeneca AB v. Mutual Pharm. Co., Inc.*, 384 F.3d 1333, 1340 (Fed. Cir. 2004). Instead, “[w]here the

general summary or description of the invention describes a feature of the invention . . . and criticizes other products . . . that lack that same feature, this operates as a clear disavowal of these other products.” *Edwards*, 582 F.3d at 1333 (quoting *Astrazeneca*, 384 F.3d at 1340). Here, HIT has clearly identified problems associated with “on-the-fly” processing, and the patents attempt to overcome those problems by disclosing a different and purportedly novel system. Now, 13 years after the patents were drafted, HIT attempts to avoid this clear and unambiguous disavowal of on-the-fly processing in three ways, all of which should be rejected.

*First*, HIT conflates the distinct steps of a user request to **load** the images from the scanner, with a user request to **view** the converted images. The patents contemplate that these two steps are separate and distinct. (Doc. #74, Clunie Decl. ¶¶ 42-50.) HIT contends that the patents contemplate “on-the-fly” processing because “the transfer engine 20 is responsible for pulling images from the scanner 16 for example, in response to a user request (Step 2010).” (Doc. #85-1, p. 12.) After request (2010) is received, however, the images are not sent to the user **until** a “user requests all images as single web page,” (Step 200). Instead, the request to transfer images (Step 2010) starts the “transfer process,” which results in “all images from the scan [being uploaded by] the transfer engine [and maintained] in their original digital format [*e.g.*, DICOM].” (‘381 Pat. at 7:25-27.) Those images are then converted (Steps 3000-5000) and stored in a “web-compatible database” (Step 7000). (‘381 Pat. at Fig. 3.) At no point, however, are those images converted as a result of Step 200 (“user requests all images as single web page”), which would be the case in an “on-the-fly” system. By comparison, in Fig. 1 (the prior art), which implements “on-the-fly” processing, Step 200 results in image

conversion (Step 1200). Accordingly, any construction that allows conversion as a result of Step 200, a user request to view an image, should be rejected.

*Second*, HIT relies on an isolated statement that all the processes performed by all of the engines “are ***preferably*** run automatically by computer” to suggest that the patents *allow on-the-fly processing*. (Doc. #85-1, p. 12.) HIT, however, misinterprets this passage. This passage explains that a user does not have to wait for all of the “engines” to execute because they are *preferably* run automatically by the computer. As explained above, however, these “engines” can be triggered by a user request to “transfer images” (Step 2010), which could cause a user to wait for the engines to run. Nowhere in this passage does it even tacitly approve of “on-the-fly” processing, *i.e.*, converting an image when a user requests to view it – for example based on “user requests all images as single web page” (Step 200). Nor is this passage sufficient to overcome the express disavowal of claim scope discussed above. *See Edwards*, 582 F.3d at 1333 (finding language identifying “number of problems” associated with prior art to constitute disclaimer, despite amendments in prosecution intended to broaden claims).

*Finally*, HIT blurs the line between on-the-fly processing, which it has disclaimed, and “real-time” processing. (Doc. #85-1, p. 12.) “Real-time” processing occurs when images are converted as they are generated by the scanner, not later when they are loaded into the system, and certainly not when they are requested by a user. (Doc. # 74, Clunie Decl. ¶¶ 51-54.) Merge’s proposed construction would not exclude “real-time” image processing, but would properly exclude on-the-fly processing.

**E. “A user interface for a medical image workstation” (‘381 Pat., Claim 1)**

MERGE’S PROPOSED CONSTRUCTION	HIT’S PROPOSED CONSTRUCTION
“a user interface which allows a user to adjust image parameters”	“a display which allows a user to navigate among medical images”

HIT argues that the Court should depart from the customary meaning of a “medical image workstation” to one of ordinary skill of the art. As set forth in Section C of Merge’s Opening Markman Brief, a medical image workstation must, among other things, allow a user to adjust image parameters (*e.g.*, brightness, contrast or magnification). HIT acknowledged as much in its preliminary injunction briefing: “Medical image workstations allow images to be rendered or placed side by side for viewing, *as well as to adjust brightness or contrast.*” (Doc. #16, p. 8 (emphasis added).)

HIT now tries to depart from its prior position by arguing that a medical image workstation only requires that a user be able to navigate between images based on the disclosures about Fig. 16 and the summary of the invention. Notably, none of these disclosures refer to a “medical image workstation” – only a “diagnostic workstation.” And, even if “diagnostic workstation” is equated to “medical image workstation,” those disclosures do not warrant a departure from the plain and ordinary meaning of a “medical image workstation” to one of ordinary skill in the art, which requires user controls to adjust the image. At the very least, the parties’ constructions should be combined to yield: “a user interface which allows a user to navigate among medical images and adjust image parameters.”

HIT also wrongly argues that this term should not be construed to require features not found in the preferred embodiment. (Doc. #85-1, p. 8.) But, to the contrary, “claims should not be limited to preferred embodiments.” *Arlington Indus. v. Bridgeport Fittings, Inc.*, 632 F.3d 1246, 1257 (Fed. Cir. 2011) (citing *Liebel-Flarsheim*, 358 F.3d at 906.)

It is well recognized, even by HIT, that a medical image workstation requires the ability to adjust image parameters. There is no disclaimer nor any reason to construe



“workstation” as “viewer.” Thus, any construction of a “medical image workstation” must include, at least, the ability to modify image parameters.

**F. “Predetermining without user input” (‘656 Patent, Claims 1 and 2)**

MERGE’S PROPOSED CONSTRUCTION	HIT’S PROPOSED CONSTRUCTIONS
“automatically determining without input from a user request for an image(s)”	<p><i>Opening Brief:</i> “automatically setting”</p> <p><i>Response Brief:</i> “Predetermining without user input”</p>

HIT yet again significantly departs from its original proposed construction and now argues that this term should not be construed. HIT’s new construction, however, leaves unanswered the question of whether a “user” is a human or includes the computer system that he is using. The patents teach, however, that the computer system should be considered part of the “user.” Specifically, the patents teach that the image display settings should be determined by the “physiologic knowledge engine” using “*a priori* knowledge of physiology, anatomy, the diagnostic question or any combination of the three.” (‘381 Pat. at 7:61-63; Fig. 6.) In other words, the image display settings should be determined based on pre-existing medical expertise. Thus, when put in context, this limitation requires that an “image display setting” (discussed next) is automatically determined based on *a priori* knowledge without input generated by a user (including the computer system).

**G. “Image display setting” (‘656 Patent, Claims 1, 9, 10, and 12)**

MERGE’S PROPOSED CONSTRUCTION	HIT’S PROPOSED CONSTRUCTIONS
“image parameters, <i>i.e.</i> , brightness, contrast, magnification, movie frame speed”	<p><i>Opening Brief:</i> “parameter that controls the characteristics of an image, such as magnification, brightness, or contrast”</p>

	<i>Response Brief:</i> “Parameter that controls the characteristics of an image”
--	--

Merge agrees that any settings related to the image itself is within the scope of this term. Merge objects, however, to including any settings about the user’s system and web browser (*e.g.*, the type of browser or the screen resolution), which are unrelated to the medical image itself. Thus, in order to remove any potential confusion from the jury, Merge requests that this term be construed to include a finite list of parameters, not an open-ended list that will likely require the Court’s intervention.

#### H. “Original resolution” (‘656 Patent, Claim 1)

MERGE’S PROPOSED CONSTRUCTION	HIT’S PROPOSED CONSTRUCTIONS
No construction needed / plain and ordinary meaning	<p><i>Opening Brief:</i> “has at least the same number of pixels as the original image for a given physical distance within the subject being imaged (for example, if each pixel represents a 1 mm x 1 mm area of a patient’s heart on the original, then each pixel in the converted image must represent an area of the heart no larger than 1 mm x 1 mm)”</p> <p><i>Response Brief:</i> “Having the same spatial resolution as the original image. For example, if each pixel represents a 1 mm x 1 mm area of a patient’s heart on the original, then each pixel in the converted image must represent an area of the heart no larger than 1 mm x 1 mm without any downsampling.”</p>

HIT originally proposed a 64-word construction that included the phrase “[h]aving at least the same number of pixels as the original image for a given physical distance within the subject being imaged.” (Doc. #61, p. 16.) In its Response Brief, HIT now argues that the term should be defined as “[h]aving the same spatial resolution as the original image. For example, if each pixel represents a 1 mm x 1 mm area of a patient’s heart on the original, then each pixel in the converted image must represent an area of the heart no larger than 1 mm x 1 mm without any downsampling.” (Doc. #93, p. 18-19.)

Neither of HIT's lengthy and confusing proposed constructions for the term "original resolution" should be adopted.

In support of its revised proposed construction for the phrase "retains its original resolution," HIT relies on the statements of its expert and statements made during the prosecution of two patents not asserted against Merge in this lawsuit. (Doc. #65, pp. 17-23; Doc. #85-1, pp. 18-19.) The phrase "original resolution" only appears in claim 1 of the '656 Patent, and the specification is silent as to the meaning of the term. There is a "heavy presumption" that the language in the claim carries its ordinary and customary meaning among artisans of ordinary skill in the relevant art. *Biogen Idec, Inc. v. GlaxoSmithKline LLC*, 713 F.3d 1090, 1095 (Fed. Cir. 2013); *See Plantronics, Inc. v. Aliph, Inc.*, 2013 WL 3927619, at \*5 (Fed. Cir. July 31, 2013) ("A heavy presumption exists that claim terms carry their full ordinary and customary meaning . . ."); *Aventis Pharms. Inc. v. Amino Chems. Ltd.*, 715 F.3d 1363, 1372 (Fed. Cir. 2013) (same).

HIT's current, 54-word construction introduces superfluous concepts and meaningless exemplary language that cuts against the plain and ordinary meaning of "original resolution." Most notably, HIT seeks to replace the phrase "original resolution" with "spatial resolution," even though there is no basis to do so. HIT also adds the phrase, "without any downsampling," again, without any basis to do so. HIT should not be permitted to apply limitations that are unsupported by the specification or intrinsic record of the patents-in-suit simply because the specification is silent as to the term's meaning. *See Seachange Int'l, Inc. v. C-Cor Inc.*, 413 F.3d 1361, 1376 (Fed. Cir. 2005) (improper to import extraneous limitations into claim when intrinsic record is silent about additional limitations). Likewise, the statements in the file histories for the related patents are not sufficient to show that the inventors acted as their own

lexicographer and defined the term “original resolution.” *See Ernie Ball, Inc. v. Earvana, LLC*, 502 F. Appx. 971, 977 (Fed. Cir. 2013) (despite arguments to distinguish term over prior art, file history did not provide a definition of the term at issue). In sum, the term needs no construction, and the ordinary and customary meaning should apply.

**I. “Providing medical information to the user” (‘381 Patent, Claim 1)**

HIT now agrees with Merge that this term should be given its plain and ordinary meaning. No construction of this term is necessary.

**J. “To permit medical diagnosis” and “without loss of diagnostic data” (‘656 Patent, Claim 1)**

TERM	MERGE’S PROPOSED CONSTRUCTION	HIT’S PROPOSED CONSTRUCTION
“to permit medical diagnosis”	Indefinite	“without loss of diagnostically relevant information”
“without loss of diagnostic data”	Indefinite	“without loss of information needed to permit a diagnosis”

As set forth in Section G of Merge’s Opening Markman Brief, HIT’s proposed constructions for these two terms demonstrate the circular – and ultimately indefinite – nature of these terms. HIT’s arguments that “to permit medical diagnosis” should mean “without the loss of diagnostically relevant data,” and “without loss of diagnostic data” should mean “without loss of information to permit a diagnosis” fail to provide the Court with any objective anchor upon which to base these terms. Indeed, Dr. John Grizzard, who HIT once held out as its expert, admitted that whether an image permits medical diagnosis depends, in part, on the “acuity of the physician.” (Ex. 2, Deposition of John Grizzard (“Grizzard Dep.”) 108:11-20.) Pressed to articulate an objective test to determine “whether or not an image is sufficient to permit medical diagnosis,” Dr.

Grizzard could not, conceding that he “cannot articulate . . . an objective standard for that.” (Grizzard Dep. 113:8-9.) As Dr. Grizzard explained:

I cannot articulate a – an objective standard for that. I think that it’s unfortunately probably similar to how the Supreme Court said something about pornography, “I know it when I see it.”

(*Id.* at 113:8-12.) Thus, a system may infringe or may not, depending on whether it “permits medical diagnosis” in the subjective opinion of different doctors. When a system “might infringe or [might] not depending on its usage in changing circumstances,” that is the “epitome of indefiniteness.” *Geneva Pharm. Inc. v. GlaxoSmithKline PLC*, 349 F.3d 1373, 1384 (Fed. Cir. 2003).

Not only do the terms “to permit medical diagnosis” and “without loss of diagnostic data” depend on the subjective opinion of a third party, but they turn, as the Court recognized during the preliminary injunction hearing, on the nature of the procedure that created the medical image in the first place. Indeed, there is a difference between an image depicting an organ (*e.g.*, a heart) and an image depicting a bone (*e.g.*, a femur). Whether a converted medical image permits medical diagnosis thus depends on the “acuity of the physician,” as Dr. Grizzard admits, and also on the nature of the procedure (as the Court observed during the preliminary injunction hearing on July 16, 2013). This only further underscores the indefiniteness of the terms “to permit medical diagnosis” and “without loss of diagnostic data.”

HIT provides no objective definition for these terms in its *Markman* brief. Instead, HIT argues that to permit medical diagnosis means “images are of sufficient

quality to enable a physician to make a diagnosis.” (Doc. #85-1, p. 14.) Again, this type of subjective standard is one that the Federal Circuit has found indefinite. *See Datamize LLC v. Plumtree Software, Inc.*, 349 F.3d 1373, 1350 (Fed. Cir. 2005). The most concrete definition HIT proposes is that “to permit medical diagnosis” means “that the diagnostically relevant information of the original image, specifically its resolution, is preserved in the converted image.” (Doc. #85-1, p. 18.) If the inventors had intended for either of these terms to incorporate the concept of “original resolution,” however, then they could have used that term as they did in the ‘656 Patent. (‘656 Patent, Claim 1.) As such, “to permit medical diagnosis” and “without loss of diagnostic data” must mean something different than “original resolution.” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 2011) (“There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims.”). Moreover, defining these terms as “original resolution” invokes another disputed term that has its own host of problems (*see* Section H, *supra*).

For all of these reasons, the Court should find the terms “to permit medical diagnosis” and “without loss of diagnostic data” indefinite.

**K. Means-Plus-Function Claims – the “engine” terms (‘698 Patent)**

The parties dispute whether the “engines” are means-plus-function terms under 35 U.S.C. § 112, ¶ 6 which would be construed to “cover the corresponding structure, material, or acts described in the specification. . . .” A term should be construed under the § 112, ¶ 6 framework when the claim term itself fails to recite a function without sufficient structure to implement that function. *Linear Tech. Corp. v. Impala Linear*

*Corp.*, 379 F.3d 1311, 1320 (Fed. Cir. 2004). In its Opening Markman Brief, HIT failed to identify any structure *within the claim language* itself. Instead, HIT argued “[t]he specification contains a detailed description of the function of each of the engine terms . . . , and a person of skill in the art would recognize each as a meaningful description of a program that performs each function.” (Doc. #85-1, p. 20.)

The Federal Circuit has repeatedly held, however, that “reciting ‘software’ without providing some detail about the means to accomplish the function is not enough” to connote sufficiently definite structure. *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1340-41 (Fed. Cir. 2008); *Aristocrat Techs. Austl. PTY Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008). Indeed, the USPTO’s supplementary examination guidelines for interpreting claim limitations under 35 U.S.C. § 112 ¶ 6 specifically directs examiners to treat “module for,” “machine for,” and “system for” as substitutes for the term “means for” because they are non-structural terms in their nature. 76 Fed. Reg. 7167. Likewise, “engine for” is a non-structure term by its nature and should be construed equivalently with “means for.” Accordingly, the Court should construe the “engine” terms as means-plus-function terms.

However, if the Court declines to apply § 112 ¶ 6 treatment, the Court should reject HIT’s overbroad proposals, and should instead adopt Merge’s proposed constructions, which are supported by the intrinsic evidence.<sup>3</sup> For example, as set forth in Merge’s opening brief, HIT’s proposed construction for “physiologic knowledge

---

<sup>3</sup> Merge also respectfully submits that any non-means-plus construction of the term “post engine” should include the responsibilities set forth in the specification. (See Doc. #88, p. 19-20.) Similarly, Merge urges the Court to adopt a construction of “encoder engine” that would specifically be directed to the conversion of medical images, as required by the patents. (*See id.*)

engine” eviscerates the patents-in-suit of their central purpose: “reducing the size of the images to allow acceptable transfer times at current Internet bandwidths without loss of diagnostic information.” (‘698 Pat. at 7:27-31.) Moreover, HIT’s proposed construction introduces terms not found in the specification or the claims, including “characteristics of an image” and “the viewer’s limits of perception.” Indeed, HIT’s Opening Markman Brief fails to even advocate any claim constructions for these terms. (Doc. #85-1, p. 20) For all these reasons, HIT’s construction is improper and unsupported. Accordingly, HIT’s proposed construction must be rejected.

### CONCLUSION

For the foregoing reasons, and the reasons set forth in Merge’s Opening Markman Brief, Merge respectfully requests that the Court adopt Merge’s proposed constructions for the disputed terms.

Respectfully submitted this 5th day of September, 2013.

/s/ Gary L. Beaver

Gary L. Beaver  
N.C. State Bar No. 10244  
NEXSEN PRUET, PLLC  
Post Office Box 3463  
Greensboro, NC 27402  
(336) 373-1600

/s/ Terrence J. Truax

Terrence J. Truax  
Illinois State Bar No. 6198872  
Benjamin Bradford  
Illinois State Bar No. 6285800  
JENNER & BLOCK LLP  
353 N. Clark Street  
Chicago, IL 60654-3456  
(312) 222-9350

**Attorneys for Defendant**



**CERTIFICATE OF SERVICE**

I hereby certify that on the 5th day of September, 2013, **DEFENDANT MERGE HEALTHCARE'S RESPONSIVE CLAIM CONSTRUCTION BRIEF** was served upon the below-named counsel of record at the address and in the manner indicated:

**James L. Lester**, NCSB 15,715  
MACCORD MASON PLLC  
P.O. Box 2974  
Greensboro, NC 27402  
Telephone: (336) 273-4422  
Email: jlester@maccordmason.com

VIA ECF NOTIFICATION

/s/ Gary L. Beaver  
Gary L. Beaver